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10/691,972	10/24/2003	Masanori Umeya	123778	6972

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OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER	
TSOY, ELENA	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/691,972	UMEYA, MASANORI	
	Examiner	Art Unit	
	Elena Tsoy	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 22, 2007 has been entered.

Response to Amendment

Amendment filed on August 22, 2007 has been entered. Claim 5 has been cancelled. Claims 1-4, 6-8 are pending in the application.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Rejection of claims 1-4, and 6-8 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been withdrawn due to amendment.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nishimura (US 6671031).

Nishimura discloses a process of producing cholesteric liquid crystal film comprising: a first step of applying, to a substrate having alignment power (See column 11, lines 26-64), a cholesteric liquid crystal solution (See column 12, lines 9-10, 23-25) prepared by dissolving a radiation-polymerizable cholesteric liquid crystalline material (See column 2, lines 33-37; column 3, lines 66+; column 6, lines 12-14) in a solvent (See column 10, lines 29-52), thereby forming a film (claimed first step); a second step of *removing the solvent* from the film formed in the first step by heating by *hot plate* or in a drying *oven* to **vaporize** the **solvent** from the coat layer (claimed second step of heating beyond its phase transition temperature) thereby obtaining an uncured cholesteric liquid crystal film (See column 12, lines 15-22).

Nishimura teaches that in order to achieve the desired cholesteric liquid crystal film, the cholesteric liquid crystal material in the applied coat layer should undergo (i) cholesteric alignment *formation*, (ii) alignment *completion,* and (iii) alignment *fixation* by crosslinking the cholesteric liquid crystalline material in the applied layer. These treatments (i)-(iii) can be carried out by various methods:

As to (i) and (ii), Nishimura teaches that depending upon the liquid crystal composition, the cholesteric alignment **formation** may *sometimes* be **completed** in an uncured cholesteric liquid crystal film in the process where the solvent is removed (See column 12, lines 22-28), and, therefore, there may be a case where no more alignment layer treatment is required (See column 12, lines 27-28) in contrast to cases where the dried coat layer is required to undergo a heat treatment after the drying process in order to render the alignment of the liquid crystal *more complete* and to *effect the crosslinking reaction* (See column 12, lines 29-33).

As to (iii), the heat treatment for rendering the alignment of the liquid crystal more *complete* can be carried out *separately* from a heat treatment to effect the crosslinking reaction (See column 12, lines 34-37). In this case when the crosslinking reaction is conducted *separately* from the cholesteric alignment formation and completion, it is preferred that the **cholesteric alignment is *fixed* by a *cooling*** operation after forming the alignment by e.g. transferring the film from the heat treatment atmosphere required for the alignment formation to the *room* temperature condition and allowing it to cool (claimed third step of **supercooling** of the uncured cholesteric liquid crystal film formed in the second step) (See column 13, lines 25-36). When a radiation-polymerizable cholesteric liquid crystalline material is used as the *crosslinkable* substance, the cholesteric alignment is *fixed* by light irradiation (not by heat treatment) by effecting the crosslinking reaction (See column 13, lines 37-43).

In short, Nishimura discloses a process of producing cholesteric liquid crystal film comprising: a first step of applying, to a substrate having alignment power (See column 11, lines 26-64), a cholesteric liquid crystal solution (See column 12, lines 9-10, 23-25) prepared by dissolving a radiation-polymerizable cholesteric liquid crystalline material (See column 2, lines 33-37; column 3, lines 66+; column 6, lines 12-14) in a solvent (See column 10, lines 29-52), thereby forming a film (**claimed first step**); a second step of *removing the solvent* from the film formed in the first step by heating by *hot plate* or in a drying *oven* to vaporize the solvent from the coat layer (**claimed second step of heating beyond its phase transition temperature**) thereby providing cholesteric alignment *formation* and *completion* of the alignment in an uncured cholesteric liquid crystal film in the process where the solvent is removed (See column 12, lines 22-29); transferring the film from the heat treatment (for removal of solvent and the formation and completion of alignment) to the *room* temperature condition and allowing it to cool (**claimed third step of supercooling* of the uncured cholesteric liquid crystal film formed in the second step**) (See column 13, lines 25-36); then **applying, for curing, radiation** to the uncured cholesteric liquid crystal film (at supercooled state) thereby obtaining a cured cholesteric liquid crystal film where the alignment is fixed by crosslinking reaction.

*It is the Examiner's position that Nishimura's step of transferring the film from the heat treatment (for removal of solvent and the formation and completion of alignment) to the *room* temperature condition and allowing it to cool reads on claimed third step of supercooling since

Applicants' specification describes that supercooling phase is achieved by leaving the film after heating at room temperature (See Abstract and P11).

As to claimed properties, the Examiner takes official notice that the cholesteric liquid crystal film produced by the process of Nishimura has all claimed properties and functions, e.g. circularly-polarized-light-separating properties, as required by claim 1, or the phase of the uncured cholesteric liquid crystal film formed in the second step being held to a supercooled cholesteric one with liquid crystalline molecules in *planar orientation,* as required by claim 2, and so on, since it is prepared by a process substantially identical to that of claimed invention.

It is held that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, claimed properties or functions are presumed to be inherent. See MPEP 2111.02, 2112.01. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTOshows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

As to a circularly-polarized-light-separating element, Nishimura teaches that a polarization diffraction film by imparting the diffraction capability to a part of the liquid crystal film (See column 15, lines 19-25). The polarization diffraction film has extensive uses as the foregoing spectroscopic optical instrument requiring a spectrally split polarization light, an optical filter, or a **circularly polarizing** plate (See column 22, lines 30-48).

6. Claims 1-4, and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamoto et al (US 6882475) in view of Nishimura, further in view of Gibbons et al (US 6103322).

Kawamoto et al are applied here for the same reasons as set forth in paragraph 7 of the Office Action mailed on 10/30/2006. Note that Kawamoto et al teach a second step of **volatilizing** the solvent, and heating the cholesteric liquid-crystal polymer to 160^0C so that liquid crystal was aligned, then cooling the liquid-crystal polymer to **room** temperature (claimed third step of supercooling) (See column 9, lines 23-26). Thus, steps of forming aligned cholesteric liquid crystal layer are substantially identical to that described in Nishimura.

Kawamoto et al fail to teach that the cholesteric liquid-crystal polymer is a photopolymerisable polymer which is cured at room temperature by radiation (Claim 1).

Nishimura is applied here for the same reasons as above. Nishimura teaches that the use of a photopolymerisable *circularly* polarizing cholesteric liquid-crystal polymer which is cured at room temperature by radiation allows to fix the cholesteric alighnment (See above).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a photopolymerisable *circularly* polarizing cholesteric liquid-crystal polymer for forming aligned choleteric liquid crystal layer in Kawamoto et al with the expectation of providing the desired fixed cholesteric alighnment, as taught by Nishimura, since Kawamoto et al teach that there is no particular limitation in kind of the cholesteric liquid-crystal layer.

Kawamoto et al in view of Nishimura fail to teach that instead of laminating preformed layers, a further cholesteric liquid-crystal polymer layer is formed on the cured cholesteric liquid-crystal polymer layer (Claim 6).

As was discussed paragraph 7 of the Office Action mailed on 10/30/2006, Gibbons et al teach that casting of cholesteric liquid crystal medium onto a substrate layer is functionally equivalent to laminating a preformed cholesteric liquid crystal film onto the substrate layer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed a second cholesteric liquid-crystal polymer layer in Kawamoto et al in view of Nishimura by casting using a method of Nishimura instead of laminating preformed layers since Gibbons et al teach that casting of cholesteric liquid crystal medium onto a substrate layer is functionally equivalent to laminating a preformed cholesteric liquid crystal film onto the substrate layer.

7. Claims 1-4, and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kameyama et al (US 6166790) in view of Nishimura, further in view of Gibbons et al.

Kameyama et al are applied here for the same reasons as set forth in paragraph 8 of the Office Action mailed on 10/30/2006. As was discussed there, Kameyama et al teach that the liquid crystal polymers can be developed, for example, by methods in which solutions of the liquid crystal polymers in solvents are developed in thin layers by e.g. cast film formation, followed by drying (See column 7, lines 6-15). The heating treatment for *orienting* developed

layers of the liquid crystal polymers can be conducted by heating the layers within the temperature range from the glass transition temperature to the isotropic phase transition temperature, namely within the temperature range in which the liquid crystal polymers exhibit liquid crystal phases (See column 7, lines 24-30). Further, the oriented state can be fixed by *natural* **cooling** the layers to less than the glass transition temperature, and there is no particular limitation on the cooling conditions (See column 7, lines 30-39).

Thus, steps of forming aligned choleteric liquid crystal layer in Kameyama et al are substantially identical to that described in Nishimura except for drying is performed by heating at temperature of alignment. However, Nishimura teaches that aligned choleteric liquid crystal layer may be formed while evaporating the solvent. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have evaporated solvent in Kameyama et al by heating with the expectation of providing the desired aligned choleteric liquid crystal layer, as taught by Nishimura.

Kameyama et al also fail to teach that the cholesteric liquid-crystal polymer is a photopolymerisable polymer which is cured at room temperature by radiation (Claim 1).

Nishimura are applied here for the same reasons as above. Nishimura teaches that the use of a photopolymerisable *circularly* polarizing cholesteric liquid-crystal polymer which is cured at room temperature by radiation allows to fix the cholesteric alighnment (See above).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a photopolymerisable *circularly* polarizing cholesteric liquid-crystal polymer in Kameyama et al with the expectation of providing the desired fixed cholesteric alighnment, as taught by Nishimura, since Kameyama et al teach that there is no particular limitation on the cholesteric liquid crystal polymers.

8. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura.

The Examiner takes official notice that it is a common knowledge in the art that the spectroscopic optical instrument requiring a spectrally split polarization light may use multiple cholesteric liquid crystal layers. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed another cholesteric liquid crystal layer on the cured first cholesteric liquid crystal layer using the same method depending on the use of a final product.

Moreover, it is a well-known principle to reapply a coating composition to achieve a desired thickness of a final coating depending on intended use of the final coated product.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have reapplied a cholesteric liquid crystal coating in Nishimura, according to well-known principle, with the expectation of providing the desired thickness of a final coating.

9. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura in view of Kawamoto et al/Kameyama et al/, further in view of Gibbons et al.

Nishimura are applied here for the same reasons as above. Nishimura fails to teach that a second layer is formed on a first crystal layer (Claim 6).

Kawamoto et al/Kameyama et al/ are applied here for the same reasons as above. Kawamoto et al/Kameyama et al/ teach that two layers of crystal layers can be used in making polarizers. They teach that the two layers of crystal layers can be preformed individually, and then laminated to each other (See above).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed a second cholesteric liquid-crystal polymer layer on the fist layer of Nishimura depending on the use, e.g. for making a polarizer, as taught by Kawamoto et al/Kameyama et al/.

Gibbons et al are applied here for the same reasons as above.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed a second cholesteric liquid-crystal polymer layer in Nishimura in view of Kawamoto et al/Kameyama et al/ using the same method as for forming a first layer of Nishimura instead of laminating a preformed layer since Gibbons et al teach that casting of cholesteric liquid crystal medium onto a substrate layer is functionally equivalent to laminating a preformed cholesteric liquid crystal film onto the substrate layer.

Response to Arguments

10. Applicants' arguments filed August 22, 2007 have been fully considered but they are not persuasive.

Rejections Under 35 U.S.C. §102 and §103

A. Nishimura

(a) Applicants argue that in contrast to the claimed invention, Nishimura fails to disclose, teach or suggest the combination of steps of heating the film beyond its phase transition temperature, thereby obtaining an uncured cholesteric liquid crystal film, followed by supercooling the uncured cholesteric liquid crystal film formed in the second step and then applying, for curing, radiation to the uncured cholesteric liquid crystal film, as claimed.

The Examiner respectfully disagrees with this argument for the reasons discussed above.

(b) Applicants argue that Nishimura teaches that, "cooling is preferably conducted, if required." See Nishimura at col. 13, lines 19-20. When heat treatments for the alignment formation and the crosslinking reaction are conducted at the same time, cooling is not required because the cholesteric alignment can be fixed by the crosslinking reaction. See Nishimura at col. 13, lines 19-25.

The Examiner respectfully disagrees with this argument. Nishimura does not require cooling when heat treatments for the alignment formation and the crosslinking reaction are conducted at the same time. However, when the heat treatments for the alignment formation and the crosslinking reaction are conducted *separately*, cooling is required (See column 13, lines 25-29). It is well settled that patents are relevant as prior art for *all* they contain including prior art's broad disclosure. Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. See MPEP 2123.

(c) Applicants argue that the Office Action asserts that Nishimura achieves the supercooling effect, because Nishimura allows the film to cool to room temperature. According to the Applicant's disclosure, "Supercooled" means that even when a melted or fluid compound is cooled to a temperature below its phase transition temperature, it does not undergo phase transition and retains its original phase, and herein indicates that the cholesteric liquid crystal film 14 is cooled to a temperature lower than the intrinsic phase transition temperature (lower limit) of its cholesteric phase." See Specification, p. 8, lines 3-10. Moreover, supercooling does not have to be room temperature. Nishimura does not specifically teach a supercooling to room temperature, but allows the film to reach room temperature. Therefore, Nishimura does not teach or suggest a third step of "supercooling."

The Examiner respectfully disagrees with this argument. Nishimura teaches that the *cholesteric alignment* is **fixed** by a *cooling* operation after forming the alignment by e.g. transferring the film from the heat treatment atmosphere required for the alignment formation to the *room* temperature condition and allowing it to cool (See column 13, lines 25-36). Therefore, in contrast to Applicants argument, cholesteric film of Nishimura does not undergo phase transition and retains its original phase, thereby indicating that the cholesteric liquid crystal film is cooled to a temperature lower than the intrinsic phase transition temperature (lower limit) of its cholesteric phase. Besides, since Applicants' specification describes that supercooling phase is achieved by leaving the film after heating at room temperature (See Abstract and page 10), the step of transferring the film from the heat treatment atmosphere required for the alignment formation to the **room** temperature condition and **allowing it to cool** in Nishimura achieves claimed supercooling phase. Moreover, a method of Nishimura is substantially identical to that claimed invention (See above).

(d) Applicants argue that Nishimura not only fails to teach or suggest the particular limitations of claim 1, but in fact teaches directly the opposite. Nishimura teaches "the light irradiation may properly be conducted after reheating the coat layer so as to impart the fluidity thereto because of the low cross-linking rate of the liquid crystal layer." See Nishimura at col. 14, lines 11-16 (emphasis added). That is, while the claimed invention performs the radiation curing to the uncured cholesteric liquid crystal film in the supercooled state, Nishimura teaches light irradiation after reheating the coat layer so as to impart the fluidity to the coat layer.

The argument is unconvincing. The step of reheating at col. 14, lines 11-16 in Nishimura is conducted only when the nematic phase has been already fixed by supercooling in the heat treatment process preceding the photo-crosslinkng, the light irradiation may properly be conducted after reheating the coat layer so as to impart the fluidity thereto because of the low crosslinking rate of the liquid crystal layer. Nishimura teaches other embodiments described above in current Office Action where *cooling* completes alignment formed during heat removal of a solvent not fixes the alignment. Thus, Nishimura does not teach directly the opposite to claimed invention. It is well settled that patents are relevant as prior art for *all* they contain including prior art's broad disclosure. Disclosed examples and preferred embodiments do not

constitute a teaching away from a broader disclosure or nonpreferred embodiments. See MPEP 2123.

(e) Applicants argue that Nishimura does not teach or suggest that light irradiation could or should be conducted when the uncured cholesteric liquid crystal film is in the supercooled state. The Office Action asserts that the step shown in Applicant's disclosure is substantially identical to the method described in Nishimura. Applicant's disclosure states, "In the step shown in FIG. l(c), the cholesteric liquid crystal film 14 may be heated or shaken in order to more fully align liquid crystalline molecules in it. Further, the step shown in FIG. 1 (c) is not necessarily essential and can be omitted if liquid crystalline molecules in the cholesteric liquid crystal film 14 are fully aligned in the step shown in FIG. l(b)." See Specification, p. 6, line 35 - p. 7, line 6). The Office Action compares this embodiment to Nishimura's disclosure, which states, "However the dried coat layer is required to undergo a heat treatment after the drying process in order to render the alignment of the liquid crystal more complete and to effect the crosslinking reaction." See Nishimura at col. 12, lines 29-33.

The Examiner respectfully disagrees with this argument because Nishimura discloses other embodiments where the dried coat layer is not required to undergo a heat treatment after the drying process in order to render the alignment of the liquid crystal (See above).

B. Kawamoto, Nishimura, and Gibbons

Applicant argues that regardless of the actual teachings of Kawamoto, Nishimura and Gibbons, none of the references teach or suggest the features of independent claim 1 of heating the film beyond its phase transition temperature, thereby obtaining an uncured cholesteric liquid crystal film, followed by supercooling the uncured cholesteric liquid crystal film formed in the second step, and then applying, for curing, radiation to the uncured cholesteric liquid crystal film. The Office Action admits that Kawamoto does not teach these limitations. Further, as described above, Nishimura not only fails to teach or suggest these limitations, but teaches directly the opposite that "the light irradiation may properly be conducted after reheating the coat layer so as to impart the fluidity thereto because of the low cross-linking rate of the liquid crystal layer" (emphasis added).

The Examiner respectfully disagrees with this argument. In contrast to Applicants argument, the Office Action admits that Kawamoto steps of forming aligned cholesteric liquid crystal layer are substantially identical to that described in Nishimura except for the cholesteric liquid-crystal polymer being a photopolymerisable polymer which is cured at room temperature by radiation (Claim 1). Nishimura here is a *secondary* reference which is relied upon to show the **missing features** of a *primary* reference of Kawamoto.

C. Nishimura, Kawamoto, Kameyama and Gibbons

With respect to Claim 1, Nishimura, Kawamoto, Kameyama, and Gibbons are discussed in detail above. For all of the reasons set forth above, none of the references teach or suggest the features of independent claim 1 of heating the film beyond its phase transition temperature, thereby obtaining an uncured cholesteric liquid crystal film, followed by supercooling the uncured cholesteric liquid crystal film formed in the second step and applying, for curing, radiation to the uncured cholesteric liquid crystal film.

The Examiner respectfully disagrees with this argument. For all of the reasons set forth above, the cited references alone or in combination teach or suggest the features of independent claim 1 of heating the film beyond its phase transition temperature, thereby obtaining an uncured cholesteric liquid crystal film, followed by supercooling the uncured cholesteric liquid crystal film formed in the second step and applying, for curing, radiation to the uncured cholesteric liquid crystal film.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Thursday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy, Ph.D.
Primary Examiner
Art Unit 1762

ELENA TSOY
PRIMARY EXAMINER
ETsoy

September 16, 2007